

REMARKS

This is a full and timely response to the non-final Office Action of October 16, 2006.

Reexamination, reconsideration, and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this First Response, claims 1-16 are pending in this application. Claims 1, 4-7, 10, 11, and 14 are directly amended herein, and claims 15 and 16 are newly added. It is believed that the foregoing amendments add no new matter to the present application.

Response to §101 Rejection

Claim 5 presently stands rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter. Applicants submit that claim 5 has been amended herein thereby mooting the Examiner's concerns under 35 U.S.C. §101. Accordingly, Applicants respectfully request that the 35 U.S.C. §101 rejection of claim 5 be withdrawn.

Response to §103 Rejections

In order for a claim to be properly rejected under 35 U.S.C. §103, the combined teachings of the prior art references must suggest all features of the claimed invention to one of ordinary skill in the art. See, e.g., *In Re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981). In addition, "(t)he PTO has the burden under section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Claim 1

Claim 1 presently stands rejected under 35 U.S.C. §103 as purportedly unpatentable over *Watanabe* (U.S. Patent No. 6,384,834) in view of *Malzbender* ("Polynomial texture maps," Proceedings of the 28th Annual Conference on Computer Graphics and Interactive Techniques, August 2001). Claim 1 reads as follows:

1. A texture mapping system, comprising:
memory for storing a parametric texture map, the parametric texture map having a plurality of texels defining a first texture, at least one of the texels defining a variable expression that defines a luminosity parameter as a function of light direction; and
a texture map manager configured to perform a rotation of the first texture thereby providing a parametric texture map defining a second texture that is rotated relative to the first texture, the texture map manager further configured to define a variable expression for a texel of the parametric texture map defining the second texture by adjusting the variable expression of the one texel to compensate for a change in relative light direction resulting from the rotation. (Emphasis added).

Applicants respectfully assert that the alleged combination of *Watanabe* and *Malzbender* fails to suggest at least the features of claim 1 highlighted hereinabove.

In this regard, it is alleged in the Office Action that *Watanabe* teaches:

"a texture map manager configured to perform a rotation of a texture defined by the parametric texture map, the texture map manager further configured to adjust at least one of the texels to compensate for the rotation (Fig. 1; column 1, lines 13-61; column 7, line 66 to column 8, line 43)."

However, the "rotation" described by *Watanabe* is for a ***graphical object***, such as a vehicle tire being displayed, to which a texture defined by a texture map is applied. Notably, the "rotation" described in *Watanabe* does not appear to be of a "texture map" that would be applied to a graphical object. Thus, there is nothing in *Watanabe* to indicate that the described "rotation" provides "a parametric ***texture map*** defining a second texture that is rotated relative to the first texture," as recited by claim 1. (Emphasis added).

Moreover, *Malzbender* appears to describe a “texture map” that has texels defining variable expressions. However, *Malzbender* fails to suggest that any of these variable expressions should be adjusted to compensate for “a change in relative light direction resulting from (a) rotation” of the texture defined by the “texture map” such that a “variable expression” for a texture map of the rotated texture is defined. Indeed, if the “texture map” of *Malzbender* is applied to a rotating graphical object, such as is described by *Watanabe*, then it appears that changes in light direction resulting from such “rotation” would be accounted for via evaluation of the variable expressions of *Malzbender*. In this regard, by substituting the current light source direction values (*i.e.*, constants) for the variable expressions provided by the “texture map” of *Malzbender*, the current pixel color values would apparently be calculated. Any such calculated color value, however, is not a “variable expression” but is instead a constant that has been calculated by substituting a constant value for a “variable expression.” Moreover, the alleged combination fails to suggest compensating for a relative change in light direction resulting from a rotation of a second texture relative to a first texture by adjusting a “variable expression” of at least one texel in order to “define a **variable expression** for a texel of the parametric texture map defining the second texture.” (Emphasis added). Thus, the alleged combination fails to suggest at least “a texture map manager configured to perform a rotation of the first texture thereby providing a parametric texture map defining a second texture that is rotated relative to the first texture, the texture map manager further configured to **define a variable expression for a texel of the parametric texture map defining the second texture by adjusting the variable expression of the one texel to compensate for a change in relative light direction resulting from the rotation,**” as recited by claim 1. (Emphasis added).

For at least the above reasons, Applicants respectfully assert that the alleged combination of *Watanabe* and *Malzbender* fails to suggest each feature of claim 1. Accordingly, the 35 U.S.C. §103 rejection of claim 1 should be withdrawn.

Claims 2-4

Claims 2-4 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly unpatentable over *Watanabe* in view of *Malzbender*. Applicants submit that the pending dependent claims 2-4 contain all features of their respective independent claim 1. Since claim 1 should be allowed, as argued hereinabove, pending dependent claims 2-4 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 5

Claim 5 presently stands rejected under 35 U.S.C. §103 as purportedly unpatentable over *Watanabe* in view of *Malzbender*. Claim 5 reads as follows:

5. A computer-readable medium encoded with a computer program, the program comprising:
 - logic for rotating a texture defined by a parametric texture map, the parametric texture map having a plurality of texels, at least one of the texels defining a variable expression that defines a luminosity parameter as a function of light direction; and
 - logic for compensating the variable expression of the one texel for a change in relative light direction resulting from a rotation of the texture by the rotating logic, wherein the compensating logic compensates for the change by adjusting the variable expression based on an angle of rotation for the texture to define a new variable expression defining the luminosity parameter for the rotated texture.*** (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Watanabe* in view of *Malzbender* fails to suggest at least the features of claim 5 highlighted above. Accordingly, the 35 U.S.C. §103 rejection of claim 5 should be withdrawn.

Claim 6

Claim 6 presently stands rejected under 35 U.S.C. §103 as purportedly unpatentable over *Watanabe* in view of *Malzbender*. Claim 6 reads as follows:

6. A texture mapping system, comprising:
means for rotating a texture defined by a parametric texture map, the parametric texture map having a plurality of texels, at least one of the texels defining a variable expression that defines a luminosity parameter as a function of light direction; and
means for compensating the variable expression of the one texel for a change in relative light direction resulting from a rotation of the texture by the rotating means, wherein the compensating means compensates for the change by adjusting the variable expression based on an angle of rotation for the texture to define a new variable expression defining the luminosity parameter for the rotated texture. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Watanabe* in view of *Malzbender* fails to suggest at least the features of claim 6 highlighted above. Accordingly, the 35 U.S.C. §103 rejection of claim 6 should be withdrawn.

Claim 7

Claim 7 presently stands rejected under 35 U.S.C. §103 as purportedly unpatentable over *Watanabe* in view of *Malzbender*. Claim 7 reads as follows:

7. A texture mapping method, comprising:
rotating a texture defined by a parametric texture map, the parametric texture map having a plurality of texels, at least one of the texels defining a variable expression that defines a luminosity parameter as a function of light direction; and
compensating for a change in relative light direction resulting from the rotating, the compensating comprising adjusting the variable expression of the one texel thereby defining a new variable expression that defines the luminosity parameter for the rotated texture. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Watanabe* in view of *Malzbender*

fails to suggest at least the features of claim 7 highlighted above. Accordingly, the 35 U.S.C. §103 rejection of claim 7 should be withdrawn.

Claims 8-10 and 16

Claims 8-10 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly unpatentable over *Watanabe* in view of *Malzbender*. In addition, claim 16 has been newly added via the amendments set forth herein. Applicants submit that the pending dependent claims 8-10 and 16 contain all features of their respective independent claim 7. Since claim 7 should be allowed, as argued hereinabove, pending dependent claims 8-10 and 16 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 11

Claim 11 presently stands rejected under 35 U.S.C. §103 as purportedly unpatentable over *Watanabe* in view of *Malzbender*. Claim 11 reads as follows:

11. A texture mapping method, comprising:
rotating a texture defined by a parametric texture map, the parametric texture map having a plurality of texels, at least one of the texels defining a variable expression that defines a luminosity parameter as a function of light direction; and
compensating the variable expression of the one texel for a change in relative light direction resulting from the rotating, wherein the compensating comprises adjusting the variable expression of the one texel based on an angle of rotation of the texture thereby defining a variable expression for a texel that defines a portion of the rotated texture. (Emphasis added).

For at least reasons similar to those set forth above in the arguments for allowance of claim 1, Applicants respectfully assert that the alleged combination of *Watanabe* in view of *Malzbender* fails to suggest at least the features of claim 11 highlighted above. Accordingly, the 35 U.S.C. §103 rejection of claim 11 should be withdrawn.

Claims 12-15

Claims 12-14 presently stand rejected in the Office Action under 35 U.S.C. §103 as allegedly unpatentable over *Watanabe* in view of *Malzbender*. In addition, claim 15 has been newly added via the amendments set forth herein. Applicants submit that the pending dependent claims 12-15 contain all features of their respective independent claim 11. Since claim 11 should be allowed, as argued hereinabove, pending dependent claims 12-15 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Response to Double Patenting Rejections

Claims 1, 2, 5, 6, 7, 8, 11, and 12 are rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over “claims 1, 5, 9, 1, 11, 15, 11, and 15, respectively, of U.S. Patent No. 7,030,884 in view of *Watanabe*” (sic) Office Action page 5. Applicants respectfully assert that neither *Watanabe* nor claims 1, 5, 9, 11, and 15 of U.S. Patent No. 7,030,884 suggest compensating for a rotation of a “parametric texture map” by adjusting a variable expression defining a texture to define a variable expression for a rotated texture. In this regard, claims 1, 5, 9, 1, 11, 15, 11, and 15 of U.S. Patent No. 7,030,884 describe compensating “for a surface distortion of (an) object.” There is nothing in the claims of U.S. Patent No. 7,030,884 to indicate that such “compensating” would compensate for a change in relative light direction resulting from a texture rotation, as described by the pending claims. Thus, for at least this reason, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness with respect to the double patenting rejections of claims 1, 2, 5, 6, 7, 8, 11, and 12 of the instant application, and Applicants request that such double patenting rejections be withdrawn.


CONCLUSION

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone Applicants' undersigned counsel.

Respectfully submitted,

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